IN THE SPECIFICATION

Please replace the paragraph beginning at page 2, lines 10-17 with the following rewritten paragraph:

The advantage of this method lies in the basic independence of satellite position and of errors due to the transmission path. It can be derived directly from the symmetry of the method. Since both connection partners ~~of a connection need~~ require both a transmitting and a receiving device, the application of the method is restricted to a few national authorities (~~D, UK, F, OE, USA~~ DE, GB, FR, OE, US, IA, IT, ES, NL) because of the relatively high ~~expenditure~~ costs. Different transmission methods can be used: FDMA (Frequency Division Multiple Access), CDMA (Code Division Multiple Access) or TDMA (Time Division Multiple Access), and the multiplex method in which

- the remote ground station can be connected to a system of redundant central clocks
- an arbitrary number of remote ground stations can be connected to the central clock
- an arbitrary number of remote ground stations can be connected to a redundant system of central clocks.

Please replace the paragraph beginning at page 3, lines 9-13, with the following rewritten paragraph:

1. In the remote station, there is a physical clock with additional power reserve. Thus, it is no longer necessary to have a highly accurate external clock as previously in the case of 2-way time transfer but the clock installed directly in the device is used. The additional power reserve allows communications interruptions to be bridged with reduced accuracy. If communication is not possible between the central and the remote clocks, the remote clock has additional power reserve to continue to keep or count time with its time rate. The accuracy of such time keeping is reduced because the remote clock does not know the exact time of the central clock because of the communication interruptions.

Please replace the paragraph beginning at page 3, lines 15-17, with the following rewritten paragraph:

2. The signals used for time transmission are at the same time used for the bi-directional exchange of the 2-way measurement data. A central clock sends a time signal including the current time of this clock to another remote clock. At the time of the reception of this time signal, the remote clock determines the time difference between the current time of the remote clock and the received time of the central clock: this is one measurement data. After that the remote clock sends a time signal to the central clock including the local time and the calculated time difference. The central clock determines the current time difference. The central clock determines the current time difference in the same procedure. With both time differences it is possible to calculate the time, which the signal needs to move from the central clock to the remote clock. If the rate of both clocks is the same it is possible to send a special time signal to synchronize the remote clock. If the rate of both clocks is not the same a control loop is necessary.

Please replace the paragraph beginning at page 3, lines 19-22, with the following rewritten paragraph:

3. Due to the continuously updated measurement data, the remote clock synchronizes to the central clock via a control loop by applying the system-related corrections. The system-related corrections are recognized from system-related corrections data, e.g., for power supply failures or signal disturbances, required to check system problems, which is ~~are~~ also exchanged between the stations.

Please replace the paragraph beginning at page 5, line 20 to page 6, line 13, with the following rewritten paragraph:

The invention is described in greater detail with reference to figure 1. Figure 1 shows an example of a simple combination consisting of a central clock (1) in a satellite ground station (5) and a remote clock (2) in another satellite ground station (11), a control signal (17) being obtained by means of suitable measuring apparatus consisting of a transmitting (7) and receiving unit (8) in the central station and the corresponding transmitting (12) and receiving unit (13) in the remote

station, in such a manner that the remote clock (2) is synchronized with the central clock (1) in state and rate, i.e., the time and rate of the remote clock is the same as that of the central clock. For this purpose, both stations are connected with a bi-directional radio link (9.1) and (9.2) via a satellite (10) and exchange the results (15, 16) from time difference measurements (6, 14) in real time in both stations directly via the radio link (9.1, 9.2) via which the time signals of the stations are also exchanged. A transparent (19) or a regenerative (20) transponder can be located on board the satellite (10). The correcting variable of the control loop (17) is formed from the difference of the two time difference measurements in the remote ground station. It influences the frequency of the remote clock (2). The reference time (3) of the central clock is provided to the user at the remote clock in the form of time signals (18). The user can also be informed in digital form of the current state of the remote clock (2) with respect to the central clock (1). Furthermore, the user can be supplied with a warning signal (21) if the deviation of the remote clock (2) with respect to the central clock (1) exceeds a limit value.

The respective state of the remote clock (2) is available in form of telemetry data (22) at the central clock.